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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,509	04/16/2004	Steven Bailey	MS304069.01 / MSFTP620US	1955
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AMIN, TUROCY & CALVIN, LLP 127 Public Square 57th Floor, Key Tower CLEVELAND, OH 44114				
EXAMINER EHICHIOYA, FRED I				
ART UNIT		PAPER NUMBER		
2169				
NOTIFICATION DATE		DELIVERY MODE		
10/03/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/826,509

Applicant(s)

BAILEY ET AL.

Examiner

FRED I. EHICHIOYA

Art Unit

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5 - 6, 8 - 9, 13 - 14, 16 - 19, 21, and 31 - 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5 - 6, 8 - 9, 13 - 14, 16 - 19, 21, and 31 - 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 28, 2008 has been entered.

Response to Arguments

2. Applicant' argue:

Applicant's arguments with respect to claims 1, 5 - 6, 8 - 9, 13 - 14, 16 - 19, 21 and 31 - 37 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. No. 2002/0129011 issued to Benoit Julien (hereinafter "Julien") in view of Non Patent Literature "Using Subpages for Cohenrency Control in

Parallel Database Systems by Andreas Listl (hereinafter "Andreas") and further in view of US Patent No. 6,249,852 issued to Benayon et al., (hereinafter "Benayon").

Regarding claim 1, Julien discloses a computer-implemented database system comprising:

A computer implemented database engine further comprising (see page 2, [0019]: the system includes a prospector unit that cooperates with at least one search engine and acts as an interface between the system and a user of the system – search engine is interpreted as database engine):

a computer-implemented page aggregator component that operates across concurrent database transactions (page 3, [0021]: "The data processing device includes an identification unit operative to connect to a plurality of sources of unstructured digitized data from which the specific information is to be collected" "an aggregator unit operative to process the extracted information elements") to obtain information on aggregate size change that occurs on a database data page (page 5, [0046]: "50 words before and 100 words after" indicate the aggregate size change); the database data page is copied and modified by transaction(s) that requires modification thereof (page 7, [0076]: "extraction and aggregation operations take place, in order to acquire the updated contact information from the home page" and also page 7, [0078] states "the system user will receive updated contact information, retrieved directly from the Web page(s) connected to the URL address(es) provided by the prospector unit 38, and the

contact information stored in the database 40 for the Web page(s) connected to the URL address(es) will be updated").

Julian does not explicitly teach sub-page level as claimed.

Andreas discloses the concurrent database transaction perform sub-page level operation on database data page (see page 766, section 2: "the VDBC uses pages subdivided into equal sized sub pages to maintain concurrency and coherency"); and a computer-implemented lock manager that enables sub page level locking across concurrent database transactions (see page 766, section 2: "Thus, we use sub page-level locking for concurrency control").

It would have been obvious to one of ordinary skills at the time of present invention to combine cited references because Andreas's teaching of "sub-page level" would have allowed Julien's system to have the advantage of using subpages to combine the simple coherency control method used by page-level locking with the reduction of unnecessary data contention provided by record level locking as suggested by Andreas at page 766, section 2.

Julian or Andreas does not explicitly teach determine an availability of space for the database data page as claimed.

Benayon discloses a computer-implemented heap allocation component that employs the information on aggregate size change to determine an availability of space for the database data page (see column 1, lines 16 – 24).

It would have been obvious to one of ordinary skills at the time of present invention to combine cited references because Benayon's teaching of "determine an

availability of space for the database data page” would have allowed Julien and Andreas’ system to manage storage for allocation and de-allocation requests of fixed sized data objects.

Regarding claim 5, Benayon discloses the computer-implemented page aggregator component enables a determination of space consumptions (column 28, lines 61 – 67) across a respective copy of database data page employed by each database transaction (see column 1, lines 51 - 59).

Regarding claim 6, Benayon discloses the computer-implemented page aggregator component determines the space consumption across the respective copy of database page from information available in the lock manager (column 1, lines 55 - 59).

Regarding claim 8, Benayon discloses the computer implemented heap allocation component tracks an availability of space on the data page (see column 1, lines 56 – 59).

Regarding claim 9, Julien discloses the computer-implemented heap allocation component and the computer-implemented page aggregator component enforce a set of conditions on a database transaction that operates on the database data page, such

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that a space availability for the database data page prior to the commit stage of the database transaction is assured (see page 5, [0043]).

5. Claims 13, 14, 16, 17, 18, 21, 31, 33, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Julien in view Benayon.

Regarding claims 13 and 21, Julien discloses a computer-implemented method that facilitates database synchronization in concurrent transactions comprising:

obtaining information on an aggregate size change that occur on a database data page as a result of concurrent database transactions operating on respective copies of the database data page (page 5, [0046] wherein "50 words before and 100 words after" indicate the aggregate size change).

Julien does not explicitly track space availability.

However, Beyanon discloses tracking a space availability for the database data page over all the concurrent database transactions (see column 1, lines 16 – 24).

It would have been obvious to one of ordinary skills at the time of present invention to combine cited references because Benayon's teaching of "tracking a space availability for the database data page" would have allowed Julien and Andreas' system to manage storage for allocation and de-allocation requests of fixed sized data objects.

Regarding claim 14, Beyanon discloses assigning locks to a resource on the data page (column 6, lines 3 - 5).

Regarding claim 16, Julien and Beyanon disclose the claimed subject matter as discussed in claim 13, Beyanon further discloses replacing a row of the database data page with an inserting pointer (see column 5, lines 28 - 32).

Regarding claim 17, Beyanon discloses inserting the row on a new page (see column 7, lines 17 - 18).

Regarding claim 18, Beyanon discloses storing the information in the locks (column 6, lines 3 - 4).

Regarding claims 31 and 36, Julien discloses a method for manipulating database data in a database data page by a database transaction comprising:

copying a database data page to a reserved space for the transaction (page 7, [0076] "extraction and aggregation operations take place, in order to acquire the updated contact information from the home page").

Julien does not explicitly teach determining an aggregate size change as claimed.

Beyanon discloses determining an aggregate size change for the database data page (see column 1, lines 16 - 24).

It would have been obvious to one of ordinary skills at the time of present invention to combine cited references because Benayon's teaching of "determine an

aggregate size change" would have allowed Julien's system to manage storage for allocation and de-allocation requests of fixed sized data objects.

Regarding claim 33, Julien discloses creating a new database page and inserting a row therein (page 4, [0037 wherein "The tag is inserted at a predetermined position with respect to the identified information element". The tag represents the record of the information element).

Regarding claim 34, Julien discloses employing a pointer in the data page to guide a query to the row in the new database page (page 3, [0020] wherein the search engine searches the WWW for pages containing or making reference to the name of the company; "reference" is the pointer that guides the query the record in the page).

6. Claims 19, 32, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Julien in view of Beyanon and further in view of US Patent No. 6,643,753 issued to Avner et al., (hereinafter "Avner").

Regarding claim 19, Julien and Beyanon disclose the claimed subject matter as discussed in claims 13, 14 and 18. Julien or Beyanon does not explicitly disclose commit as claimed.

Avner discloses discarding the locks upon at least one of a roll back of a database transaction and committing a database transaction (see column 5, line 67 – column 6, line 4).

It would have been obvious to one of ordinary skills at the time of present invention to combine cited references because Avner's teaching of "committing a database transaction" would have allowed Julien and Beyanon's system to permits allocations within heaps even if one or more heaps are currently locked. This increases the efficiency of virtual memory usage and reduces the risk of virtual memory fragmentation as suggested by Avner (Summary).

Regarding claim 32, Avner discloses the method of claim 31 further comprising tracking a space availability on the database data page across a plurality of concurrent database transactions working on the database data page (see column 11, lines 2 - 8).

Regarding claim 35, Avner discloses the method of claim 31 further comprising locking a resource at a row level on the database data page (see column 2, lines 54 – 55).

Regarding claim 37, Avner discloses the method of claim 32 further comprising assuring availability of space on the database data page prior to a commit stage of the concurrent database transactions operating on the database data page to mitigate

reorganization of data around the database data page at the commit stage (see column 3, lines 15 – 17).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRED I. EHICHIOYA whose telephone number is (571)272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pierre M. Vital can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fred I. Ehichioya/
Examiner, Art Unit 2169

October 2, 2008